

CLAIMS

Please cancel claims 1-18.

Please add the following new claims:

19. An epicyclic cross piston engine comprising:

a #1 cylinder, a #2 cylinder, a #3 cylinder and a #4 cylinder and they each have a cylindrical bore;

a #1 cylindrical piston, a #2 cylindrical piston, a #3 cylindrical piston and a #4 cylindrical piston and they each have a top surface and a bottom end;

an elongated master connecting rod having a top end, a bottom end and a longitudinally extending Y-axis; said master connecting rod having a mid-point having a transversely extending #2 bore hole;

first connection means rigidly connecting said top end of said master connecting rod to said bottom end of said #1 cylindrical piston; said #1 cylindrical piston being telescopically received in said bottom end of said #1 cylinder for reciprocal travel;

second connection means rigidly connecting said bottom end of said master connecting rod to said bottom end of said #3 cylindrical piston; said #3 cylindrical piston being telescopically received in said bottom end of said #3 cylinder for reciprocal travel;

an elongated secondary connecting rod having a front end, a rear end and a longitudinally extending X-axis; said secondary connecting rod having a transversely extending #1 bore hole;

third connecting means rigidly connecting said top end of said secondary connecting rod to said bottom end of said #2 cylindrical piston; said #2 cylindrical piston being telescopically received in said bottom end of said #2 cylinder for reciprocal travel;

fourth connection means rigidly connecting said bottom end of said secondary connecting rod to said bottom end of said #4 cylindrical piston; said #4 cylindrical piston being telescopically received in said bottom end of said #4 cylinder for reciprocal travel;

1 an elongated output shaft having a front end, a rear end and a longitudinally extending Z-
2 axis;

3 said Z-axis is oriented perpendicular to both said X-axis and said Y-axis; said X-axis and
4 said Y-axis lie in separate parallel planes perpendicular to said Z-axis and said separate parallel
5 planes are longitudinally spaced from each other a predetermined distance J along said Z-axis;
6 said X-axis and said Y-axis are oriented substantially ninety degrees to each other when looking
7 along said Z-axis;

8 drive train means connecting said master connecting rod and said secondary connecting
9 rod to said output shaft that produces 360 degree rotation in said output shaft as a result of a
10 complete reciprocal travel cycle of each of said pistons in their respective cylinders;

11 said drive train means comprising:

12 an elongated bellcrank coordinating arm having a front end, a rear end, a rear
13 surface and a front surface;

14 an elongated bellcrank output arm having a front end, a rear end, a rear surface
15 and a front surface; a #3 bore hole is formed in said bellcrank output arm adjacent
16 said rear end of said bellcrank output arm;

17 an elongated driveshaft link having a front end, a rear end, a rear surface and a
18 front surface;

19 a #1 pin having a front end, a rear end and a longitudinally extending A-axis; said
20 rear end being journaled in said #1 bore hole of said secondary connecting rod;
21 said front end of said #1 pin being rigidly connected to said rear surface of said
22 bellcrank coordinating arm adjacent said rear end of said bellcrank coordinating
23 arm;

24 a #2 pin having a front end, a rear end and a longitudinally extending B-axis; said
25 #2 pin being journaled in said #2 bore hole of said master connecting rod; said
26 rear end of said #2 pin being rigidly connected to said front surface of said
27 bellcrank coordinating arm adjacent said top end of said bellcrank coordinating
28 arm; said front end of said #2 pin being rigidly connected to said rear surface of

1 said bellcrank output arm adjacent said front end of said bellcrank output arm;
2 a #3 pin having a front end, a rear end and a longitudinally extending C-axis; said
3 rear end of said #3 pin is journaled in said #3 bore hole in said bellcrank output
4 arm; said front end of said #3 pin is rigidly connected to said rear surface of said
5 driveshaft link adjacent said front end of said driveshaft link; and
6 said rear end of said output shaft is rigidly connected to said front surface of said
7 driveshaft link.

8 20. An epicyclic cross piston engine as recited in claim 19 wherein said B-axis is parallel
9 to said A-axis and said B-axis is located a predetermined distance E from said A-axis.

10 21. An epicyclic cross piston engine as recited in claim 20 wherein said C-axis is
11 parallel to said B-axis and said distance between said B-axis and said C-axis is $\frac{1}{2}$ E.

12 22. An epicyclic cross piston engine as recited in claim 21 wherein the distance between
13 said C-axis and said B-axis is F and F is equal to $\frac{1}{2}$ E.